**Table 1 KS1 Programmes of Study**

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| **Curriculum 2000** | **New Curriculum** |
| **Sc2 Life processes and living things**  **Life processes**  1. Pupils should be taught:   1. the differences between things that are living and things that have never been alive 2. that animals, including humans, move, feed, grow, use their senses and reproduce 3. to relate life processes to animals and plants found in the local environment. | These aspects can be found in the units below:   * Living things and their habitats * Animals including humans |
| **Humans and other animals**  2. Pupils should be taught:   1. to recognise and compare the main external parts of the bodies of humans and other animals 2. that humans and other animals need food and water to stay alive 3. that taking exercise and eating the right types and amounts of food help humans to keep healthy 4. about the role of drugs as medicines 5. how to treat animals with care and sensitivity 6. that humans and other animals can produce offspring and that these offspring grow into adults 7. about the senses that enable humans and other animals to be aware of the world around them. | YR.1  **Animals including humans**  Pupils should be taught to:   * identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals * identify and name a variety of common animals that are carnivores, herbivores and omnivores * describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) * identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.   Yr.2  Pupils should be taught to:   * notice that animals, including humans, have offspring which grow into adults * find out about and describe the basic needs of animals, including humans, for survival (water, food and air) * describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. |
| **Green plants**  3. Pupils should be taught:   1. to recognise that plants need light and water to grow 2. to recognise and name the leaf, flower, stem and root of flowering plants 3. that seeds grow into flowering plants. | **Plants**  Pupils should be taught to:  Yr.1   * identify and name a variety of common wild and garden plants, including deciduous and evergreen trees * identify and describe the basic structure of a variety of common flowering plants, including trees   Yr.2   * observe and describe how seeds and bulbs grow into mature plants * find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. |
| **Variation and classification**  4. Pupils should be taught to:   1. recognise similarities and differences between themselves and others, and to treat others with sensitivity 2. group living things according to observable similarities and differences. |  |
| **Living things in their environment**  5. Pupils should be taught to:   1. find out about the different kinds of plants and animals in the local environment 2. identify similarities and differences between local environments and ways in which these affect animals and plants that are found there 3. care for the environment. | Yr.2  **Living things and their habitats**  Pupils should be taught to:   * explore and compare the differences between things that are living, dead, and things that have never been alive * identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other * identify and name a variety of plants and animals in their habitats, including micro-habitats * describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. |
| **Sc3 Materials and their properties**  **Grouping materials**  1. Pupils should be taught to:   1. use their senses to explore and recognise the similarities and differences between materials 2. sort objects into groups on the basis of simple material properties [for example, roughness, hardness, shininess, ability to float, transparency and whether they are magnetic or non-magnetic] 3. recognise and name common types of material [for example, metal, plastic, wood, paper, rock] and recognise that some of them are found naturally 4. find out about the uses of a variety of materials [for example, glass, wood, wool] and how these are chosen for specific uses on the basis of their simple properties.   **Changing materials**  2. Pupils should be taught to:   1. find out how the shapes of objects made from some materials can be changed by some processes, including squashing, bending, twisting and stretching 2. explore and describe the way some everyday materials [for example, water, chocolate, bread, clay] change when they are heated or cooled. | **Everyday materials**  Yr.1  Pupils should be taught to:   * distinguish between an object and the material from which it is made * identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock * describe the physical properties of a variety of everyday materials * compare and group together a variety of everyday materials on the basis of their simple physical properties   **Uses of everyday materials**  Yr.2  Pupils should be taught to:   * identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses * find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching |
| **Sc4 Physical processes**  **Electricity**  1. Pupils should be taught:   1. about everyday appliances that use electricity 2. about simple series circuits involving batteries, wires, bulbs and other components [for example, buzzers, motors] 3. how a switch can be used to break a circuit. |  |
| **Forces and motion**  2. Pupils should be taught:   1. to find out about, and describe the movement of, familiar things [for example, cars going faster, slowing down, changing direction] 2. that both pushes and pulls are examples of forces 3. to recognise that when things speed up, slow down or change direction, there is a cause [for example, a push or a pull]. |  |
| **Light and sound**  3. Pupils should be taught:  **Light and dark**   1. to identify different light sources, including the Sun 2. that darkness is the absence of light   **Making and detecting sounds**   1. that there are many kinds of sound and sources of sound 2. that sounds travel away from sources, getting fainter as they do so, and that they are heard when they enter the ear. |  |
|  | **Yr.1**  **Seasonal changes**  Pupils should be taught to:   * observe changes across the four seasons * observe and describe weather associated with the seasons and how day length varies. |
| **Breadth of study**  1. During the key stage, pupils should be taught the Knowledge, skills and understanding through:   1. a range of domestic and environmental contexts that are familiar and of interest to them 2. looking at the part science has played in the development of many useful things 3. using a range of sources of information and data, including ICT-based sources 4. using first-hand and secondary data to carry out a range of scientific investigations, including complete investigations.   2. During the key stage, pupils should be taught to:  **Communication**  use simple scientific language to communicate ideas and to name and describe living things, materials, phenomena and processes  **Health and safety**  recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others. |  |

**Table 2 KS2 Programmes of Study**

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| **Curriculum 2000** | **New Curriculum** |
| **Sc2 Life processes and living things**  **Life processes**  1. 1. Pupils should be taught:   1. that the life processes common to humans and other animals include nutrition, movement, growth and reproduction 2. that the life processes common to plants include growth, nutrition and reproduction 3. to make links between life processes in familiar animals and plants and the environments in which they are found. | The learning objectives for the Life Processes unit are covered in other units in the new curriculum. |
| **Humans and other animals**  2. Pupils should be taught:  **Nutrition**   * about the functions and care of teeth * about the need for food for activity and growth, and about the importance of an adequate and varied diet for health   **Circulation**   * that the heart acts as a pump to circulate the blood through vessels around the body, including through the lungs * about the effect of exercise and rest on pulse rate   **Movement**   * that humans and some other animals have skeletons and muscles to support and protect their bodies and to help them to move   **Growth and reproduction**   * about the main stages of the human life cycle   **Health**   * about the effects on the human body of tobacco, alcohol and other drugs, and how these relate to their personal health * about the importance of exercise for good health. | **Animals, including humans**  YR.3  Pupils should be taught to:   * identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat * identify that humans and some animals have skeletons and muscles for support, protection and movement.   Yr.4  Pupils should be taught to:   * describe the simple functions of the basic parts of the digestive system in humans * identify the different types of teeth in humans and their simple functions * construct and interpret a variety of food chains, identifying producers, predators and prey.   YR.5   * describe the changes as humans develop from birth to old age.   YR.6   * identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood * recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function * describe the ways in which nutrients and water are transported within animals, including humans. |
| **Green plants**  3. Pupils should be taught:  **Growth and nutrition**   * the effect of light, air, water and temperature on plant growth * the role of the leaf in producing new material for growth * that the root anchors the plant, and that water and minerals are taken in through the root and transported through the stem to other parts of the plant   **Reproduction**   * about the parts of the flower [for example, stigma, stamen, petal, sepal] and their role in the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination. | Yr.3  **Plants**  Pupils should be taught to:   * identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers * explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant * investigate the way in which water is transported within plants * explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. |
| **Variation and classification**  4. Pupils should be taught to:   * to make and use keys * how locally occurring animals and plants can be identified and assigned to groups * that the variety of plants and animals makes it important to identify them and assign them to groups. | Living things and their habitats  Pupils should be taught to:  Year 4   * recognise that living things can be grouped in a variety of ways * explore and use classification keys to help group. Identify and name a variety of living things in their local and wider environment |
| **Living things in their environment**  5. Pupils should be taught to:   * about ways in which living things and the environment need protection   **Adaptation**   * about the different plants and animals found in different habitats * how animals and plants in two different habitats are suited to their environment   **Feeding relationships**   * to use food chains to show feeding relationships in a habitat * about how nearly all food chains start with a green plant   **Micro-organisms**   * that micro-organisms are living organisms that are often too small to be seen, and that they may be beneficial | **Living things and their habitats**  YR.4   * Recognise that environments can change and that this can sometimes pose dangers to living things.   YR.5  Pupils should be taught to:   * explain the differences in the life cycles of a mammal, an amphibian, an insect and a bird * describe the life process of reproduction in some plants and animals.   YR.6   * describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals * give reasons for classifying plants and animals based on specific characteristics. |
| **Sc3 Materials and their properties**  **Grouping and classifying materials**  1. Pupils should be taught:   * to compare everyday materials and objects on the basis of their material properties, including hardness, strength, flexibility and magnetic behaviour, and to relate these properties to everyday uses of the materials * that some materials are better thermal insulators than others * that some materials are better electrical conductors than others * to describe and group rocks and soils on the basis of their characteristics, including appearance, texture and permeability * to recognise differences between solids, liquids and gases, in terms of ease of flow and maintenance of shape and volume.   **Changing materials**  2. Pupils should be taught:   * to describe changes that occur when materials are mixed [for example, adding salt to water] * to describe changes that occur when materials [for example, water, clay, dough] are heated or cooled * that temperature is a measure of how hot or cold things are * about reversible changes, including dissolving, melting, boiling, condensing, freezing and evaporating * the part played by evaporation and condensation in the water cycle * that non-reversible changes result in the formation of new materials that may be useful * that burning materials [for example, wood, wax, natural gas] results in the formation of new materials and that this change is not usually reversible.   **Separating mixtures of materials**  Pupils should be taught:   * how to separate solid particles of different sizes by sieving [for example, those in soil] * that some solids [for example, salt, sugar] dissolve in water to give solutions but some [for example, sand, chalk] do not * how to separate insoluble solids from liquids by filtering * how to recover dissolved solids by evaporating the liquid from the solution * to use knowledge of solids, liquids and gases to decide how mixtures might be separated. | Yr.3  **Rocks**  Pupils should be taught to:   * compare and group together different kinds of rocks on the basis of their appearance and simple physical properties * describe in simple terms how fossils are formed when things that have lived are trapped within rock * recognise that soils are made from rocks and organic matter.   Yr.4  **States of matter**   * compare and group materials together, according to whether they are solids, liquids or gases * observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) * identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.   Yr.5  **Properties and changes of materials**  Pupils should be taught to:   * compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets * know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution * use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating * give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic * demonstrate that dissolving, mixing and changes of state are reversible changes * explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. |
| **Sc4 Physical processes**  **Electricity**  1. **Simple circuits**   * to construct circuits, incorporating a battery or power supply and a range of switches, to make electrical devices work [for example, buzzers, motors] * how changing the number or type of components [for example, batteries, bulbs, wires] in a series circuit can make bulbs brighter or dimmer * how to represent series circuits by drawings and conventional symbols, and how to construct series circuits on the basis of drawings and diagrams using conventional symbols. | Yr.4  **Electricity**  Pupils should be taught to:   * identify common appliances that run on electricity * construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers * identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery * recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit * recognise some common conductors and insulators, and associate metals with being good conductors.   Yr.6  **Electricity**  Pupils should be taught to:   * associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit * compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches * use recognised symbols when representing a simple circuit in a diagram**.** |
| **Forces and motion**  2. Pupils should be taught:  **Types of force**   * about the forces of attraction and repulsion between magnets, and about the forces of attraction between magnets and magnetic materials * that objects are pulled downwards because of the gravitational attraction between them and the Earth * about friction, including air resistance, as a force that slows moving objects and may prevent objects from starting to move * that when objects [for example, a spring, a table] are pushed or pulled, an opposing pull or push can be felt * how to measure forces and identify the direction in which they act. | Yr.3  **Forces and magnets**  Pupils should be taught to:   * compare how things move on different surfaces * notice that some forces need contact between two objects, but magnetic forces can act at a distance * observe how magnets attract or repel each other and attract some materials and not others * compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials * describe magnets as having two poles * predict whether two magnets will attract or repel each other, depending on which poles are facing.   Yr.5  **Forces**  Pupils should be taught to:   * explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object * identify the effects of air resistance, water resistance and friction, that act between moving surfaces * recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect |
| **Light and sound**  3. Pupils should be taught:  **Everyday effects of light**   * that light travels from a source * that light cannot pass through some materials, and how this leads to the formation of shadows * that light is reflected from surfaces [for example, mirrors, polished metals]   **Seeing**   * that we see things only when light from them enters our eyes   **Vibration and sound**   * that sounds are made when objects [for example, strings on musical instruments] vibrate but that vibrations are not always directly visible * how to change the pitch and loudness of sounds produced by some vibrating objects [for example, a drum skin, a plucked string] * that vibrations from sound sources require a medium [for example, metal, wood, glass, air] through which to travel to the ear. | **Light**  Pupils should be taught to:  Yr.3   * recognise that they need light in order to see things and that dark is the absence of light * notice that light is reflected from surfaces * recognise that light from the sun can be dangerous and that there are ways to protect their eyes * recognise that shadows are formed when light from a light source is blocked by a solid object * find patterns that the size of shadows change   Yr.6   * recognise that light appears to travel in straight lines * use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye * explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes * use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them,   **Sound**  Pupils should be taught to:  Yr4   * identify how sounds are made, associating some of them with something vibrating * recognise that vibrations from sound travels through a medium to the ear * find patterns between the pitch of a sound and features of the object that produced it * find patterns between the volume of a sound and the strength of the vibrations that produced it. * Recognise that sound gets fainter as the distance from the sound source increases |
| **The Earth and beyond**  4. Pupils should be taught:  **The Sun, Earth and Moon**   * that the Sun, Earth and Moon are approximately spherical   **Periodic changes**   * how the position of the Sun appears to change during the day, and how shadows change as this happens * how day and night are related to the spin of the Earth on its own axis * that the Earth orbits the Sun once each year, and that the Moon takes approximately 28 days to orbit the Earth. | Yr.5  **Earth and space**  Pupils should be taught to:   * describe the movement of the Earth, and other planets, relative to the Sun in the solar system * describe the movement of the Moon relative to the Earth * describe the Sun, Earth and Moon as approximately spherical bodies * use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky |
|  | **Evolution and inheritance**  **Yr 6**  Pupils should be taught to:   * recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago * recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents * identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. |
| **Breadth of study**  1. During the key stage, pupils should be taught the Knowledge, skills and understanding through:   * a range of domestic and environmental contexts that are familiar and of interest to them * looking at the part science has played in the development of many useful things * using a range of sources of information and data, including ICT-based sources * using first-hand and secondary data to carry out a range of scientific investigations, including complete investigations.   2.**Communication**   * use appropriate scientific language and terms, including SI units of measurement [for example, metre, newton] , to communicate ideas and explain the behaviour of living things, materials, phenomena and processes   **Health and safety**   * recognise that there are hazards in living things, materials and physical processes, and assess risks and take action to reduce risks to themselves and others. |  |